

confirmation test and durability test of the semiconductor device fabricated in step 5 are conducted. After these steps, the semiconductor device is completed and shipped (step 7). --

IN THE CLAIMS:

Please CANCEL claims 1-9 without prejudice to or disclaimer of the recited subject matter.

Please ADD new claims 11-19, as follows. For the Examiner's convenience, all claims currently pending in this application have been reproduced below:

10. A device manufacturing method, comprising:
positioning at least one of a substrate and a master on an exposure apparatus by controlling a stage apparatus comprising a linear motor including first magnets arrayed such that polarization directions thereof are periodically opposite, second magnets arrayed adjacent to the first magnets such that polarization directions thereof are periodically opposite, and an electromagnetic coil opposing the first and second magnets to generate the Lorentz force by at least the first and second magnets, the second magnets being disposed such that the polarization directions thereof intersect those of the first magnets, and a stage driven by the linear motor, the stage apparatus being adapted to drive the stage by energizing the electromagnetic coil to move the electromagnetic coil and the first and second magnets relative to each other; and
transferring a pattern of said master onto said substrate.

Please ADD new claims 11-19 as follows:

-- 11. A linear motor comprising:

a magnet array having a plurality of first magnets arrayed such that polarization directions thereof are periodically opposite, and a plurality of second magnets arrayed such that polarization directions thereof are periodically opposite and intersect those of said first magnets;

an electromagnetic coil disposed to oppose said magnet array to generate a Lorentz force in cooperation with said magnet array; and

a yoke integrated with said coil at a first side opposite to a second side of said coil disposed opposite to said magnet array.

12. The linear motor according to claim 11, wherein the polarization directions of said second magnets intersect those of the first magnets at an angle of substantially 90° .

13. The linear motor according to claim 11, wherein said first and second magnets are rectangular parallelepiped permanent magnets.

14. The linear motor according to claim 11, wherein said electromagnetic coil comprises at least two electromagnetic coils disposed to oppose said first and second magnets and to be energized simultaneously.

15. The linear motor according to claim 11, wherein said first and second magnets are permanent magnets with the same shape.

16. The permanent magnet according to claim 11, wherein either one of said first and second magnets, which is disposed at a terminal end, has a volume smaller than those of other magnets.

17. The linear motor according to claim 11, wherein said first and second magnets generate a sine wave magnetic field.

18. A stage apparatus comprising:

a linear motor including a magnet array having a plurality of first magnets arrayed such that polarization directions thereof are periodically opposite, and a plurality of second magnets arrayed such that polarization directions thereof are periodically opposite and intersect those of said first magnets, an electromagnetic coil disposed to oppose said magnet array to generate a Lorentz force in cooperation with said magnet array and a yoke integrated with said coil at a first side opposite to a second side of said coil disposed opposite to said magnet array; and

a stage driven by said linear motor,

said electromagnetic coil being energized to move said electromagnetic coil and said magnet array relative to each other, thereby driving said stage.

19. An exposure apparatus comprising:

a linear motor including a magnet array having a plurality of first magnets arrayed such that polarization directions thereof are periodically opposite, and a plurality of second magnets arrayed such that polarization directions thereof are periodically opposite and intersect those of said first magnets, an electromagnetic coil disposed to oppose said magnet array to generate a Lorentz force in cooperation with said magnet array and a yoke integrated with said coil at a first side opposite to a second side of said coil disposed opposite to said magnet array; and

a stage driven by said linear motor,

said electromagnetic coil being energized to move said electromagnetic coil and said magnet array relative to each other, thereby to position at least one of a substrate and a master with a stage apparatus comprising the linear motor. --

REMARKS

Applicant requests favorable reconsideration and allowance of the subject application in view of the preceding amendments and the following remarks.